Amendments to the Claims

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (currently amended) A fuel cell power plant (10) for generating electrical energy from a process oxidant stream (53, 42, 28) and a reducing fluid stream (26), the plant comprising:

a) at least one fuel cell (12) for producing the electrical energy from the process oxidant stream (53, 28) and the reducing fluid stream (26), and providing a fuel cell exhaust stream (48) containing moisture and sensible heat;

b) an energy recovery device (32) having first and second gas flow channels (44, 42) separated by a respective enthalpy exchange barrier (46), the fuel cell exhaust stream (48) connected to pass through the first gas flow channel (44) and a source of process oxidant (30) for the process oxidant stream (53) connected to pass through the second gas flow channel (42), thereby to allow mass and heat transfer between the gases in the first and second gas flow channels via the enthalpy exchange barrier; ~~and~~

c) a supply of liquid medium (66); and

d) ~~injection~~ means (58, 60) for~~disposed to~~ injecting the~~a~~ liquid medium (66, 64) substantially directly into the process oxidant stream (53) preparatory to the process oxidant passing through the energy recovery device second gas flow channel (42) for regulating the transfer of mass and heat between the fuel cell exhaust stream (48) and the process oxidant stream (53, 42).

2. (currently amended) The fuel cell power plant (10) of claim **1** wherein the energy recovery device includes an inlet (54) for receiving the process oxidant stream (53) to pass through the second gas flow channel (42), the liquid medium for injection is water, and the injecting~~on~~ means (58, 60) is positioned to inject the water into the process oxidant stream (53) immediately upstream of said inlet (54).

3. (currently amended) The fuel cell power plant (10) of claim **2** including a plenum (62) located immediately upstream of said inlet (54), said process oxidant stream (53) flows through said plenum (62), and wherein the injecting~~on~~ means (58, 60) is operative to inject water (66, 64) into the plenum (62) for intimate mixing with and humidification of the process oxidant stream.

4. (currently amended) The fuel cell power plant of claim **2** wherein the injecting~~on~~ means comprises one or more spray nozzles (60) disposed to inject a spray of water (66, 64) into the plenum (62).

5. (currently amended) The fuel cell power plant (10) of claim **3** wherein the injecting~~on~~ means comprises one or more spray nozzles (60) disposed to inject a spray of water (66, 64) into the plenum (62).

6. (currently amended) The fuel cell power plant (10) of claim **1** including control means (70, 74, 78, 80, 84) operatively associated with the injecting~~on~~ means (58, 60) for controlling at least the amount of the liquid medium (66, 64) being injected.

7. (original) The fuel cell power plant (10) of claim **6** wherein the control means (70, 74, 78, 80, 84) include at least one or the other of a temperature sensor (80) for sensing the temperature of ambient process oxidant and a humidity sensor (84) for sensing the moisture content of the ambient process oxidant.

8. (original) The fuel cell power plant (10) of claim **7** wherein the control means (70, 74, 78, 80, 84) includes both the temperature sensor (80) and the humidity sensor (84).

9. (original) The fuel cell power plant (10) of claim **1** wherein the enthalpy exchange barrier (46) of the energy recovery device (32) comprises a fine-pore support matrix.

10. (original) The fuel cell power plant (10) of claim **9** wherein the fine-pore support matrix is one or a combination selected from the group consisting of porous graphite layers; porous graphite-polymer layers, inorganic-fiber thermoset polymer layers, glass fiber layers, synthetic-fiber filter papers treated to be wettable, porous metal layers, and perforated metal layers with particulate material in the pores.

11. (currently amended) In a fuel cell power plant (10) for generating electrical energy from a process oxidant stream (53, 42, 28) and a reducing fluid stream (26), the plant comprising a fuel cell (12) for producing the electrical energy from the process oxidant stream (53, 28) and the reducing fluid stream (26), and providing a fuel cell exhaust stream (48) containing moisture

and sensible heat; and an energy recovery device (32) having first and second gas flow channels (44, 42) separated by a respective enthalpy exchange barrier (46), the fuel cell exhaust stream (48) connected to pass through the first gas flow channel (44) and a source of process oxidant (30) for the process oxidant stream (53) connected to pass through the second gas flow channel (42), thereby to allow mass and heat transfer between the gases in the first and second gas flow channels via the enthalpy exchange barrier, the method comprising:

dispensing water (66, 70, 74, 60, 64) substantially directly into the process oxidant stream (53) preparatory to the process oxidant passing through the energy recovery device second gas flow channel (42) for regulating the transfer of mass and heat between the fuel cell exhaust stream (48) and the process oxidant stream (53, 42).

12. (original) The method of claim **11** wherein the step of dispensing water (66, 70, 74, 60, 64) into the process oxidant stream (53) comprises monitoring (80, 84, 90) one or more parameters of the fuel cell power plant (10), including the process oxidant stream (53, 42, 28), and controllably injecting water into the process oxidant stream (53) in response to the one or more of the monitored parameters.

13. (original) The method of claim **12** comprising the steps of monitoring (80) the temperature of the process oxidant stream (53), and injecting water (66, 70, 74, 60, 64) into the process oxidant stream when the temperature exceeds a threshold, thereby to cool and humidify the process oxidant stream (53, 42) to inhibit

dry-out of the enthalpy exchange barrier 46 in the energy recovery device 32.

14. (currently amended) The method of claim **13** wherein the temperature threshold is higher than~~in the range of~~ about 85^0 F and lower than about~~to~~ 90^0 F.

15. (currently amended) The method of claim **12** wherein the operating status of the power plant (10) is monitored (70, 80) to identify a~~the condition of~~ start-up condition, and injecting water (66, 70, 74, 60, 64) into the process oxidant stream upon start-up, at least after a shutdown exceeding a predetermined duration, for assuring sufficient wetting of the enthalpy exchange barrier (46) during start-up.

16. (original) The method of claim **15** wherein a temperature of the power plant (10), including the inlet temperature of the process oxidant stream (53, 42, 28), is monitored (80) to detect a freezing condition, and controllably (70, 78) injecting heated water (66, 58, 60, 64) during start-up in response to detection of a freezing condition to defrost at least the energy recovery device 32.

17. (currently amended) The method of claim **12** wherein the fuel cell power plant (10) includes a coolant system (38, 88) having a coolant, the coolant having a level, and including the steps of monitoring (90) the level of coolant in the coolant system (38, 88) and injecting water (66, 58, 70, 74, 78, 60, 64) into the process oxidant stream when the coolant level exceeds a threshold, thereby to raise the dew point of the process oxidant stream (53, 42) to inhibit recovery of

water from the fuel cell exhaust stream 48 via the enthalpy exchange barrier 46 to the process oxidant stream (42).